

ABSTRACT

An encoder encodes sound data and the like to generate a binary signal. A mapper converts the  
5 binary signal into a quaternary symbol and outputs the quaternary symbol. A base band filter includes a root raised cosine filter and a sinc filter. The base band filter blocks a predetermined frequency component of a symbol to shape the symbol into a waveform signal and  
10 outputs the waveform signal shaped. An FM modulator transmits a signal subjected to FM modulation according to a magnitude of an amplitude of a waveform signal to a receiving unit. When a symbol of  $\pm 3$  is outputted from the mapper, a frequency shift of a  
15 signal transmitted from the FM modulator has a predetermined value in a range of  $\pm 0.822[\text{kHz}]$  to  $\pm 0.952[\text{kHz}]$ . This makes it possible to provide a modulating apparatus, a mobile communication system, a modulating method, and a communication method that use  
20 a modulating method that can conform to the FCC rule to be enforced in 2005 without using a linear power amplifier.